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ABSTRACT

An investigation was made of the relationship between sex-role orientation (as measured by the Bem Sex Role Inventory) and responsiveness in infant care (as determined by observations on the Nursing Child Assessment Feeding Scale). Subjects participating in the study consisted of 44 father/infant dyads. It was hypothesized that androgynous fathers would interact more responsively with their infants than would fathers with a sex-typed orientation and that fathers with a high degree of feminine traits would interact more responsively with their infants than fathers with a low degree of feminine traits. Classification of fathers yielded four sex-role orientation groups, including 13 androgynous, 9 masculine, 9 feminine, and 13 undifferentiated fathers. Findings indicated that (1) interaction scores were higher in dyads with female infants than in those with male infants, (2) androgynous fathers did not interact more responsively with their infants than did fathers with a sex-typed masculine orientation, (3) fathers with high feminine traits interacted more responsively with their infants than fathers with a low degree of feminine traits, and (4) masculinity was not negatively related to paternal responsiveness. Such findings suggest that femininity scores, not androgyny scores, predict paternal responsiveness in interaction. Of more general significance, it was found that 43 of the 44 fathers cared for their infants on a regular basis and that nearly 1 in 5 was the main caregiver. (RH)

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FATHER-INFANT INTERACTION AND SEX ROLE

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The surge of literature on fathering in the 1970's suggested that fathers can interact in a nurturing responsive way with their children, and that they may contribute in many ways to infant health and development (Eyres, Barnard, & Gray, 1980; Lamb, 1976; Slater, 1977; Weinraub, 1978). To achieve a care-giving role would require that traditionally "feminine" traits of nurturance be present in the father. The cluster of traits labeled as "feminine" by American culture includes yielding, emotional, and likes children, by contrast with those labeled "masculine" which include aggressive, dominant, and unemotional.

The research problem of the present study was to investigate the relationship between sex-role orientation measured by the Bem Sex Role Inventory (BSRI) and responsiveness determined by an observational measure, the Nursing Child Assessment Feeding Scale (NCAFS). Sex role orientation also referred to as gender norm identity (Burr, 1979) includes not only femininity and masculinity, but also androgyny, a flexible role orientation incorporating feminine and masculine traits as equal to each other. Controversy about how to measure the concept of androgyny, and about its meaning, have arisen since Bem's (1974) introduction of her tool. It has been suggested that masculinity and femininity cannot combine into the unidimensional construct of androgyny, and that the BSRI measures expressive and instrumental traits rather than feminine and masculine traits (Baumrind, 1982; Spence, 1982). Since this controversy is both theoretical and cultural, it will probably continue for some time.

The construct of androgyny questions traditional assumptions about sex "typed" roles. It reflects a paradigm shift away from assuming a biological basis for sex role orientation toward the suggestion that masculine-

feminine differences originate in society and have primarily psychosocial rather than biological implications. These include implications for parent-child interaction, especially father-child interaction. Earlier works described the father as aloof and distant, his impact mediated through the mother (Ainsworth, 1960; Bowlby, 1951). Now that fathers are taking greater child-care responsibilities (Bromberg & Shumway, 1980) and there is an increasing number of children without fathers (Biller, 1976), society is focusing more on the direct significance of the father. His role is seen as potentially similar to the mother's with differences being a part of sex role histories (Pederson, Yarrow, Anderson, & Cain, 1978). A father may be "feminine," and, therefore, possess the ability to responsively interact with children, even though he is biological male. Bem's construct suggests that a man who is androgynous should have an even greater advantage (Bem, 1975). Thus, the androgyny literature supports the contrasting hypotheses that "femininity" vs. "androgyny" in men should be related to responsiveness in infant care, and the following are the alternative hypotheses for this study:

1. Androgynous fathers interact more responsively with their infants than fathers with a sex-typed orientation.

2. Fathers with a high degree of feminine traits interact more responsively with their infant than fathers who have a low degree of feminine traits.

Methodology

Subjects. The subjects for the study consisted of forty-four father-infant dyads. All fathers and mothers had attended childbirth preparation classes taught by instructors certified by the American Society for Psychoprophylaxis in Obstetrics. The sample was, therefore, assumed to be biased

in favor of responsive and feminine fathers, with masculine fathers in the minority. Identifying a sample of involved fathers to determine relation between self-perception of sex-typed traits and behavior has the advantage of eliminating the confounding effects of major differences in amount of involvement. There is the risk that such a group is not "typical," however, since the majority of expectant couples in the selected geographic area attend some type of childbirth classes, such involvement is well within the community norm.

All subjects were caucasian, middle class, married more than one and less than four years at the time of the birth of this child and living in the Maryland suburbs of Washington, D.C. and Baltimore in the fall of 1980. Fathers were between 21 and 31 years of age at the time of observation, employed, and averaged 15.6 years of education. All infants were healthy, first-born infants, averaging 11.8 months of age at the time of observation.

Setting and procedure. Couples were contacted by their childbirth educator to ask if a researcher could telephone them to discuss participation in the study. Interested couples were then called by the researcher, who explained that participation involved both the completion of a pen-and-paper test (BSRI) asking then to describe themselves, which would take about 15 minutes, and having an observer in the home watching the father feed the infant for one evening meal. The home environment was chosen because it is where the father and infant normally interact, and it is where they have the most control. A feeding episode was chosen because it is a frequent and essential care-giving activity and is central in early parent-child interaction. It is also an easily defined unit with a beginning and end not controlled by the researcher, and is a natural situation to assess interaction

and attachment. However, the decision to limit the observation to feeding time does limit the types of information collected, and those fathers who happen to spend more time in this activity may be more comfortable when observed, and thus, scored higher on interaction than if observed in a wide range of activities.

The father was instructed to announce to the researcher when he and the infant were beginning and ending the meal. He was informed that the researcher would sit where father and infant could be visualized, frequently across the dinner table, but that the researcher would not speak during the feeding, since this might effect the infant's behavior. The father was told that the researcher would make check marks on a paper that listed possible activities, and that the father could see this check list before the researcher left the home. The father and infant had complete control of the feeding episode itself, including whether or not to assist the infant. Mothers were encouraged to stay in the home, but were asked to leave the room during the meal to minimize infant distraction both directly by interacting with the infant and indirectly by such activities as "fielding" incoming phone calls. The presence of an unknown adult sitting quietly nearby during the meal was a potential distractor to the dyad that could not be avoided, but which was at least consistently present for all subjects. Mealtime averaged 16.6 minutes. The completion of the BSRI, by both father and mother, preceded the meal in half of the subjects and followed it in half, to randomize testing effects. BSRI scores were calculated after all forty-four dyads had been observed, and the observer was unaware of any individual scores and their relationship to other scores. All observations were by one observer, but inter-observer reliability was established with colleagues using videotapes before and during data collection (r = .89).

Instrumentation

The Bem Sex Role Inventory (BSRI) (Bem, 1974) yielded a score for each subject on the Masculinity Scale and on the Femininity Scale. The traditional BSRI scoring (Bem, 1976) yields four distinct groups of subjects based on the medians of each scale for the group: Masculine (high masculine-low feminine), feminine (low masculine-high feminine), androgynous (high masculine-high feminine), and undifferentiated (low masculine-low feminine). This traditional scoring is accepted for this study, but does assume a discrete difference between androgyny and femininity-masculinity which is questionable when the androgynous category is based on the other two, and has the disadvantage of converting continuous data (scores on the Masculinity and Femininity Scales) into categorical data, resulting in a loss of precision and power.

The Nursing Child Assessment Feeding Scale (NCAFS), developed at the University of Washington School of Nursing (Barnard, 1978) was used by the observer to assess the father-infant interaction. This tool consists of a 76-item check list, defining the interaction based on six constructs: (a) parent's sensitivity to cues, (b) parent's response to distress (when distress occurs), (c) social-emotional growth fostering behaviors of parent, (d) cognitive growth fostering behaviors of parent, (e) clarity of cues of infant, and (f) responsiveness to parent of infant. These are measured by a series of dichotomous items to determine the presence or absence of specific behaviors in the interaction. A nine-week training program followed by the establishment of inter-rater reliability was completed by the observer to become certified to use this tool. A longitudinal study by Barnard (1979) of 846 parent-infant dyads examined reliability and validity, and involved

some father-infant dyads, but a majority of mother-infant dyads. Reliability in the present study was computed on the NCAFS for the total sample, yielding an alpha of .73. When considering only the observations of the father (constructs a-d) an alpha of .75 was obtained. Alpha would have improved to .82 if construct b, response to distress, had been eliminated. This particular part of the tool is unique in that if an infant exhibits no distress behavior during the interaction, the parent-infant dyad is automatically given the maximum number of points for this part of the interaction.

Results

Classification of fathers yielded four sex role orientation groups (Bem, 1976), including thirteen adrogynous, nine masculine, nine feminine, and thirteen undifferentiated fathers. This was based on the fathers' median scores of 5.44 (range 3.80-6.75) on the Masculinity Scale, and median scores of 4.65 (range 3.05-5.75) on the Femininity Scale. Summarized in Table 1, these scores can, with limitations, be compared to Bem's sample of 723 Stanford University undergraduates in assessing an expected bias in favor of feminine or responsive fathers (Bem, 1976). It should be noted that the number of fathers in the masculine or sex-typed category (nine) is relatively small.

Insert Table 1 about here

Most fathers, including all fathers in the feminine category, described the feeding as "typical," and only one father (masculine category) said that he was not involved routinely in child care. Of the eight fathers (18%) who described themselves as the main care-givers of their infants, none had described himself as masculine on the BSRI relative to this group.

Scores for responsiveness in the parent-infant interaction, obtained during the meal episode, averaged 59.6 for all fathers (SD 7.3, Range 47.0-71.0). This can be compared to Barnard's (1979a) sample which consisted primarily of mother-infant dyads, and yielded an average score of 61.8 (See Table 2). This type of comparison is limited by many variables, including numbers of subjects, and differences in subject characteristics such as infant age.

Insert Table 2 about here

Interaction scores were higher in dyads with female infants than those with male infants. Father-infant daughter dyads averaged 70.7 on the NCAFS. Father-infant son dyads averaged 52.4 on the NCAFS.

Results relative to the two hypotheses are summarized in Table 3. The first hypothesis of this study was that androgynous fathers interact more responsively with their infants than fathers with a sex-typed (masculine) orientation. This hypothesis was not supported.

Insert Table 3 about here

The second hypothesis of this study was that fathers with high feminine traits interact more responsively with their infants than fathers who have a low degree of feminine traits. This relationship was supported, $F = 4.06$, $p < .05$.

Discussion

The results suggest that femininity, not androgyny, scores predict paternal responsiveness in interaction. Moreover, masculinity is not

negatively related to paternal responsiveness. However, since the only difference between the androgynous and masculine groups is scores on the femininity scale, one would still expect a difference between the androgynous and the masculine groups. This difference was not significant in the present sample. It seems that a more appropriate analysis with the BSRI is a correlational analysis, since femininity is a continuous, not dichotomous, variable. For this, and for considerations mentioned earlier, Bem's 1974 categories appear to be of limited value in analysis of the BSRI, whatever their conceptual merits. The fact that femininity correlates with more responsiveness suggests that more sensitive measures may find more behavioral differences with androgynous fathers as well. That the NCAFS did detect differences in behavior suggests that this tool is valid for research as well as clinical purposes, and that it merits further development and use in direct observational studies.

The difference in means between the scores for male and female infants and their fathers is a particularly important finding deserving follow-up. Female infants may elicit different behaviors from their fathers than male infants do. The study should be done with raters blind to the sex of the infant. This could be done by asking families to dress all babies in the same outfit. This could rule out possible observer biases in sex difference responsiveness. Function of sex of the child in parent-child interaction has been addressed in previous studies (Fagot, 1978; Frodi & Lamb, 1978; Rebelsky & Hanks, 1971), with findings influenced by types of behavior observed and other variables such as developmental phases and perceived significance of sex stereotypy.

That the one father not involved in infant care described himself as masculine, and that none of the eight who were main care-givers did so,

suggests that these fathers label themselves correctly using the BSRI, and therefore, tends to validate the BSRI. Perhaps more important is the fact that of 44 fathers, 43 cared for their infants on a regular basis, and almost one in five was the main care-giver. This supports evidence that the role of the father is both direct and increasing. Whether and how this role differs from the mother's, especially the role fathers play in sex-typing, is an important question. However, the fact that fathers do play the role of care-giver has major implications in itself for professionals studying, teaching, counseling, and working with parents and expectant parents. Any program or plan of care for this population that assumes an indirect or minor care-giving role for the father is likely to be ineffective or inefficient.

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Table 1

Comparison of Median Scores on the Masculinity and Femininity Scales of the Bem Sex Role Inventory for Present Sample and Bem Sample*

	Masculinity Scale Median Score	Femininity Scale Median Score
Present Sample (44 males)	5.44	4.65
Present Sample - Mothers (44 females)	4.65	5.39
Bem Sample (375 males 290 females)	4.89	4.76

*Bem's 1975 sample of Stanford undergraduates (Bem, 1976)

Table 2

Summary Data of Present Sample and Barnard's*

Sample of the Scores on the Nursing Child

Assessment Feeding Scales

	$\bar{X}$	SD	Range
Present Sample (N = 44)	59.64	7.27	47.00 - 71.00
Barnard's Sample (N = 845)	61.8	4.7	18.00 - 76.00

*(Barnard, 1979A) Includes mother-infant and father-infant dyads, with infants ranging from three months to twelve months.

Table 3

Analysis of Variance Between Androgynous and Masculine-Typed Father Groups, and High- and Low-Feminine Father Groups, on the NCAFS Score

	F	p
Androgynous (N = 13) vs. Masculine (N = 9)	1.48	.24
Masculinity Scale	2.54	.12
Femininity Scale	4.06	.05
Masculine-Feminine Interaction	.05	.82